Section 5 – Sustainability and Energy Efficiency - Subsection B

The City of Cedar Falls has set a goal for the new project to be certified under the U.S. Green Building Council's (USGBC's) ***L**eadership in **E**nergy and **E**nvironmental **D**esign for New Construction,* (LEED-3.0) program at the certified or silver level. It is a key objective of this project and an expectation of the city to achieve this level of environmentally responsibility. This will minimize the impact of the construction process on the environment while providing an efficient enhanced environment. The following strategies and methods will be among those employed by this project.

Integrated design - A design team consisting of experienced city staff, architects, engineers, city planners and specialized consultants will be involved. Energy and environmental issues and problems will be solved in a collaborative manner seeking non-traditional solutions with green goals in mind.

Commissioning - A commissioning authority will provide commissioning services as defined by LEED and will be an active participant in the integrated design effort described above.

Optimization of energy performance - Use of energy in a facility such as the public works building is important. Passive and active energy using systems in the building will be optimized. This includes building environmental systems, exhaust systems as well as the building envelope construction. Building environmental systems and exhaust systems will utilize the latest technology, including energy recovery systems, to optimize the use of energy in the building. The building envelope will have thermal properties beyond building code requirements. The commissioning process will assure that the design of all systems are properly documented and constructed in accordance with the design intent. On site closed loop geothermal system will be utilized in appropriate areas.

Energy efficiency - Energy efficient equipment will be used in the building. The building will have options to turn off systems such as lighting, and environmental conditioning when a particular area of the building is not being used. This must be done without sacrificing the safety of the occupants.

Measurement and verification - Systems that are designed to be energy efficient can produce less than optimal results if operated incorrectly. The building control system will be designed to provide detailed incremental data so that human error will not circumvent projected energy savings.

Protection and conservation of water - Existing waterways near the site will be protected from sediments and other pollutants during the construction phase and the building will be designed to reduce rain water runoff to less than the predevelopment levels. On site rain garden development will help to capture and filter surface water. Pervious paving will be utilized where appropriate to also help reduce the environmental impact of paved areas.

Indoor water efficient use - All water fixtures will be low volume, including low flow faucets, dual flush water closets, and ultra low flush urinals.

Outdoor water efficient use - The project will strive to limit use of domestic water for landscape irrigation. Native plant materials will be used for the public works project which will require limited or no irrigation once established. Where irrigation is necessary, captured rain water may be used.

Ventilation and thermal comfort - Appropriate spaces in the building will have user controlled thermostats. Ventilation of spaces will be controlled by CO_2 sensors that will automatically bring in fresh outside air when needed.

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Moisture control - The envelope of the building (walls, windows, and roof) will be designed to prevent moisture of any kind from entering. Humidity control systems will be installed to control moisture produced within the building where appropriate.

Day lighting - Natural day lighting will be utilized to limit the need for artificial lighting. Light sensors will be used at appropriate areas to adjust the level of electric lighting down when adequate levels of day light exist.

Low-emitting materials - Building materials that emit gases that are hazardous to human health will not be used for this project.

Protection of indoor air quality during construction - Materials will be protected from excessive moisture penetration during construction, ductwork and piping will be capped to prevent contaminants from entering, and no smoking will be allowed on or around the construction site.

Reducing the environmental impact of materials - Wherever possible, materials that have been extracted and manufactured within 500 miles of the site will be utilized. Wood materials will be FSC certified and rapidly renewable materials will be used where possible.

Maximizing recycled and bio-based content - Where possible, products with recycled or bio-based content will be used. Flooring and ceiling materials will have high recycled content as well as the structural steel used.

Reduction and recycling of construction waste - This project will reduce construction waste wherever possible and will recycle waste produced during construction where applicable.

A holistic approach to the programming and design process considers the energy efficiency of the individual building systems as well other factors that might affect the performance of the building: building placement, orientation, and the impact of the facility's architectural and mechanical/electrical systems design on energy-use patterns.

- The City of Cedar Falls and the design team have set a goal for the public works facility to meet LEED certification, with the expectation of achieving a certified or silver level rating. The buildings would meet or exceed both building code and Energy Star requirements.

Section 5 Subsection B – See Exhibit 12 attached for specific LEED check list

Let us know if you have any questions.

Sincerely,

Brad Leeper, AIA, Principal

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LEED 2009 for New Construction and Major Renovation

Project Checklist

City of Cedar Falls Public Works Facility

21-Jul-09

Y	N	?			
4	5	5	**Sustainable Sites**	Possible Points:	**26**
Y			Prereq 1	Construction Activity Pollution Prevention	
	1		Credit 1	Site Selection	1
	1		Credit 2	Development Density and Community Connectivity	5
	1		Credit 3	Brownfield Redevelopment	1
	1		Credit 4.1	Alternative Transportation—Public Transportation Access	6
		1	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
		1	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
		1	Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
		1	Credit 6.2	Stormwater Design—Quality Control	1
1			Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1
7	0	2	**Water Efficiency**	Possible Points:	**10**
Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
			2	Reduce by 50%	2
			2	No Potable Water Use or Irrigation	4
		1	Credit 2	Innovative Wastewater Technologies	2
3		1	Credit 3	Water Use Reduction	2 to 4
			2	Reduce by 30%	2
			1	Reduce by 35%	3
			?	Reduce by 40%	4

11	13	3	**Energy and Atmosphere**		Possible Points:	**35**
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems		
Y			Prereq 2	Minimum Energy Performance		
Y			Prereq 3	Fundamental Refrigerant Management		
8		3	Credit 1	Optimize Energy Performance		1 to 19
					Improve by 12% for New Buildings or 8% for Existing Building Renovations	1
					Improve by 14% for New Buildings or 10% for Existing Building Renovations	2
					Improve by 16% for New Buildings or 12% for Existing Building Renovations	3
					Improve by 18% for New Buildings or 14% for Existing Building Renovations	4
					Improve by 20% for New Buildings or 16% for Existing Building Renovations	5
					Improve by 22% for New Buildings or 18% for Existing Building Renovations	6
					Improve by 24% for New Buildings or 20% for Existing Building Renovations	7
				8	Improve by 26% for New Buildings or 22% for Existing Building Renovations	8
					Improve by 28% for New Buildings or 24% for Existing Building Renovations	9
					Improve by 30% for New Buildings or 26% for Existing Building Renovations	10
				?	Improve by 32% for New Buildings or 28% for Existing Building Renovations	11
					Improve by 34% for New Buildings or 30% for Existing Building Renovations	12
					Improve by 36% for New Buildings or 32% for Existing Building Renovations	13
					Improve by 38% for New Buildings or 34% for Existing Building Renovations	14
					Improve by 40% for New Buildings or 36% for Existing Building Renovations	15
					Improve by 42% for New Buildings or 38% for Existing Building Renovations	16
					Improve by 44% for New Buildings or 40% for Existing Building Renovations	17
					Improve by 46% for New Buildings or 42% for Existing Building Renovations	18
					Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19
	7		Credit 2	On-Site Renewable Energy		1 to 7
					1% Renewable Energy	1
					3% Renewable Energy	2
					5% Renewable Energy	3
					7% Renewable Energy	4
					9% Renewable Energy	5
					11% Renewable Energy	6
					13% Renewable Energy	7
	2		Credit 3	Enhanced Commissioning		2
	2		Credit 4	Enhanced Refrigerant Management		2
3			Credit 5	Measurement and Verification		3
	2		Credit 6	Green Power		2

3	7	4	**Materials and Resources**	Possible Points:	**14**
Y			Prereq 1	Storage and Collection of Recyclables	
	3		Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
				Reuse 55%	1
				Reuse 75%	2
				Reuse 95%	3
	1		Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
1		1	Credit 2	Construction Waste Management	1 to 2
			1	50% Recycled or Salvaged	1
			?	75% Recycled or Salvaged	2
	2		Credit 3	Materials Reuse	1 to 2
				Reuse 5%	1
				Reuse 10%	2
1		1	Credit 4	Recycled Content	1 to 2
			1	10% of Content	1
			?	20% of Content	2
1		1	Credit 5	Regional Materials	1 to 2
			1	10% of Materials	1
			?	20% of Materials	2
	1		Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

12	1	2	**Indoor Environmental Quality**	Possible Points:	**15**
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
	1		Credit 1	Outdoor Air Delivery Monitoring	1
1			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
		1	Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
		1	Credit 8.2	Daylight and Views—Views	1

3	2	1	**Innovation and Design Process**	Possible Points:	**6**
1			Credit 1.1 Innovation in Design: Specific Title		1
1			Credit 1.2 Innovation in Design: Specific Title		1
		1	Credit 1.3 Innovation in Design: Specific Title		1
	1		Credit 1.4 Innovation in Design: Specific Title		1
	1		Credit 1.5 Innovation in Design: Specific Title		1
1			Credit 2 LEED Accredited Professional		1
0	**3**	**1**	**Regional Priority Credits**	Possible Points:	**4**
		1	Credit 1.1 Regional Priority: Specific Credit		1
	1		Credit 1.2 Regional Priority: Specific Credit		1
	1		Credit 1.3 Regional Priority: Specific Credit		1
	1		Credit 1.4 Regional Priority: Specific Credit		1
40	31	18	**Total**	Possible Points:	**110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110